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Studies in the North American Convolvulaceae. I.

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The genus *Jacquemontia* Choisy (Mém. Soc. Phys. Genèv. **6**: 476. 1833) is based upon *J. azurea* (Desr.) Choisy (*l. c.*), which seems to be the same as, or at least closely related to, *Jacquemontia sphaerostigma* (Cav.) Rusby (Bull. Torrey Club **26**: 151. 1899). Following the type adopted by Choisy, all the species without the capitately clustered inflorescence and foliaceous bracts should be retained in *Jacquemontia*. Those species having the large foliaceous, hairy or pubescent bracts and densely capitate inflorescence form a natural group worthy of generic recognition.

THYELLA Raf. Fl. Tellur. **4**: 84. 1836

Annual or perennial twining or upright herbs. Leaves alternate; blades entire or lobed. Flowers in dense capitate clusters, interspersed with numerous enlarged and foliaceous bracts, the outer ones usually the largest; bracts and sepals often shaggy or densely pubescent. Sepals narrow, equal. Corolla blue, violet or white, the limb plaited, campanulate, 5-angled or 5-lobed. Stamens 5, not surpassing the corolla. Ovary 2-celled; styles united up to the two ovoid, flattened stigmas. Capsules subglobose, 4-valved. Seeds minutely roughened.

Type species, *T. tamnifolia* (L.) Raf.

Represented by about 12 species, mostly South American, the three following occurring in North America:*

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* The following species of tropical South America should also be referred here:

Thyella acrocephala (Meissn.)

Jacquemontia acrocephala Meissn. in Mart. Fl. Bras. 7: 302. 1869.

Thyella bracteosa (Meissn.)

Jacquemontia bracteosa Meissn. *l. c.* 304.

Thyella Choisyana (Meissn.)

Jacquemontia Choisyana Meissn. *l. c.* 302.
Ipomoea laciocladcos Choisy; Meissn. *l. c.* as syn.

THYELLA TAMNIFOLIA (L.) Raf. Fl. Tellur. **4** : 84. 1836
Ipomoea tamnifolia L. Sp. Pl. 161. 1753.
Convolvulus tamnifolius Ell. Sk. **1** : 258. 1817.
Jacquemontia tamnifolia Griseb. Fl. Br. W. Ind. 474. 1861.

South Carolina to Arkansas, Florida, Louisiana, and throughout tropical America.

Thyella pycnocephala (Benth.)

Jacquemontia pycnocephala Benth. Bot. Voy. Sulphur 137. 1845.

Southern Mexico and Central America.

Thyella lactescens (Seem.)

Jacquemontia lactescens Seem. Bot. Voy. Herald 171. 1854.

Panama.

Jacquemontia simulata sp. nov.

Perennial; stems twining, somewhat woody, smooth, the branches short, tomentose when young; leaf-blades narrowly ovate or oblong-ovate, rounded or subcordate at the base in the larger leaves, acute, 1.5–4 cm. long, densely velvety-pubescent on both surfaces, petioles shorter than the blades, 5–10 mm. long; pedicels sessile, 3–6 mm. long, the flowers not surpassing the leaves; sepals orbicular or obovate, rounded at the apex, 1.5–2 mm. long, subequal, tomentose; corolla 8–10 mm. long, blue, glabrous, the margin slightly 5-angled, and fully 10 mm. broad.

Thyella eriocephala (Moric.)
Ipomoea eriocephala Moric. Pl. Nouv. Am. 43. *pl. 29.* 1838.
Jacquemontia eriocephala Meissn. *l. c.* 303.

Thyella maynensis (Meissn.)
Jacquemontia eriocephala maynensis Meissn. *l. c.* 303.

Thyella montana (Moric.)
Ipomoea montana Moric. Pl. Nouv. Am. 44. *pl. 30.* 1838.
Jacquemontia montana Meissn. in Mart. Fl. Bras. 7 : 304. 1869.

Thyella rufa-velutina (Meissn.)
Jacquemontia rufo-velutina Meissn. *l. c.* 305.

Thyella serrata (Choisy)
Ipomoea serrata Choisy, Conv. Rar. 135. 1837.—In DC. Prodr. 9 : 364. 1845.
Jacquemontia serrata Meissn. in Mart. Fl. Bras. 7 : 304. 1869.

Thyella sphaerocephala (Meissn.)
Jacquemontia sphaerocephala Meissn. *l. c.* 306.

Yucatan: G. F. Gaumer, 1895 (*no. 574*); type in the herbarium of the New York Botanical Garden.

Distributed as *J. abutiloides*, which it resembles only, but most strikingly, in the texture of the leaves. The inflorescence and flowers possess characters which are very different and serve to distinguish it easily from *J. abutiloides*.

Three species of the genus *Cressa* are now recognized in North America, viz. *C. aphylla* Heller, *C. depressa* Goodding, and *C. truxillensis* H.B.K.; and to these must be added a fourth:

Cressa insularis sp. nov.

Perennial by a lignescent base or woody root; stems branching mostly above, spreading, the tips ascending, 10–30 cm. long, leafy, densely pubescent with very fine silvery crinkled hairs; leaf-blades small, sessile, ovate, 2–4 mm. long, broadest below the middle, rounded at the base, apex acute; flowers subsessile or the pedicels 1–2 mm. long; sepals elliptical-oblong, about 3–5 mm. long, convex, obtuse or rounded, the subtending bracts very small, ovate, 1–1.5 mm. long; lobes of the corolla oblong, spreading, obtuse or rounded at the apex, 1–1.5 mm. long, pubescent without; capsules subconical, obtuse, slightly exceeding the calyx.

MEXICO: Socorro Island: F. E. Barkelew (Expedition to the Revillagigedo Islands; Calif. Acad. Sciences), *no. 252*; type sheet, *no. 399033* in the National Herbarium.

Clarion Island: A. W. Anthony, 1897 (*no. 409*).

HAWAIIAN ISLANDS: Near Pearl City, Oahu, A. A. Heller, 1895 (*no. 2410*).

Closely resembling the *C. cretica* of the old world, which is also in its typical form a small-leaved species but has a much smaller calyx and longer more acute lobes to the corolla, and is pubescent with some spreading hairs in addition to being canescent.

The genus *Evolvulus* L. is represented in North America by about twenty-two species, nearly all of them small and inconspicuous annuals or perennials. A brief study of the available herbarium material shows that the Mexican species in particular are in need of a careful revision. The following new species are offered as a preliminary contribution to such a work:

Evolvulus Wilcoxiana sp. nov.

Perennial; branching from a woody, deep-seated root; branches diffuse and spreading, lignescent below, the herbaceous tips sometimes ascending, 5–15 cm. long, softly and densely villous-pubescent with ascending, slightly spreading hairs; leaf-blades sessile, oblong or elliptical in the lower to ovate-lanceolate in the upper, obtuse or subacute at the base, the apex acute, silky-villous beneath with long silvery subappressed hairs, green and glabrous above, conspicuously convex and falcate, 5–15 mm. long; pedicels very short, 1–3 mm. long, the bracts linear-lanceolate, 5–8 mm. long, exceeding the pedicels but not the calyces; sepals broadly lanceolate, acuminate, 4–5 mm. long, silky-villous without; corolla white or pale blue, subrotate, 8–12 mm. broad, the margin with 5 rounded, slightly retuse lobes, the plicae villous without; capsules slightly exceeding the sepals, subglobose, 4-valved, 4-seeded, the seeds dark reddish-brown, smooth.

ARIZONA: Near Fort Huachuca, Timothy E. Wilcox, 1894 (*no. 96*); type sheet, *no. 212769* in the National Herbarium. May, 1892 and 1894 (*no. 8*), by the same collector. Copper Basin, J. W. Toumey, 1892 (*no. 185*); Apache Pass, Chirricahua Mts., J. G. Lemmon, 1881 (*no. 247*).

NEW MEXICO: Grant County, H. H. Rusby, 1881 (*no. 298*); Mangas Springs, O. B. Metcalf, 1903 (*no. 100*).

COAHUILA OR NUEVO LEON: Dr. Edward Palmer, 1880 (*no. 912*).

This species has been referred to *E. discolor* Benth., a species of Mexico, from which this differs by its more dense pubescence of markedly different character, falcate, convex leaf-blades, larger sepals and bracts. The general tufted and spreading habit of this species is also quite different from its Mexican congener.

The abundant and beautiful specimens collected by General Wilcox lead me to attach his name to this characteristic species of southern Arizona.

Evolvulus Wrightii sp. nov.

Perennial; low, branching from a lignescent or somewhat woody base; branches spreading and ascending, densely shaggy-pubescent with long silky hairs, especially above on the stem and on the lower leaf-surfaces; stems 1–2 dm. long; leaf-blades sessile, ovate or narrowly ovate, rounded at the base, the apex acute, 6–10 mm. long, 5–7 mm. broad, less pubescent above than below; pedicels shorter than the leaves, 1-flowered; sepals linear, 4 mm. long; corolla blue, about 7 mm. broad, subrotate, the limb subentire, the throat white.

CUBA: Pinar del Rio, C. Wright, Sept. 1865 (*no. 3105*); type in the herbarium of the New York Botanical Garden.

Differs from the South American species, *E. incanus* Pers., to which it has been referred, by the relatively shorter and broader leaf-blades, the small linear sepals, the much smaller corolla, and the more silky pubescence.

Evolvulus Palmeri sp. nov.

Perennial; silky-pubescent, branching from a woody base; the branches herbaceous, spreading or ascending, 5–15 cm. long; leaf-blades ascending, sessile, very small, narrowly lanceolate, 4–6 mm. long, 1–1.5 mm. broad, the apex acuminate-cuspidate, the base acute, densely pubescent beneath with silvery appressed hairs, less so above; flowers in the axils of the upper reduced leaves, the uppermost becoming bract-like; pedicels short, 2–3 mm. long or less; sepals linear-lanceolate, 3–4 mm. long.

MEXICO: Durango, Dr. Edward Palmer, 1896 (*no. 208*); type in the United States National Herbarium.

The corolla of this distinct species has not been seen, but its other characters are so different from any other Mexican species that it seems best to describe it as new. Of the only two species of doubtful identity to which this might be referred, *E. microphyllus* Mart. & Gal. is excluded by "pedunculis unifloris bibracteolatis, folio 3–4-plo longioribus," and *E. albiflorus* Mart. & Gal. by "pedunculis .... folio superantibus; folia subpollicares."

Evolvulus adscendens sp. nov.

Annual; extensively branching from a thickened base; stems ascending, 30–50 cm. tall, pilose above with very fine spreading hairs; leaves sparingly hirsute on both surfaces; petioles 1–2 mm. long; leaf-blades broadly ovate, 1.5–2.5 cm. long, the lower ones rounded at the base, obtuse or rounded at the apex, the upper ones reduced in size, becoming bract-like, elliptical or oblong-ovate, obtuse or acute; the inflorescence paniculate; peduncles as long as the leaves or the upper much exceeding the leaves, filiform, 1- or 2-flowered, 1–2 cm. long, less pubescent than the stems; bracts subulate, 1–2 mm. long, the pedicels 2–3 mm. long; sepals ovate-lanceolate, acuminate, pubescent, 2–2.5 mm. long; corolla blue, 4–5 mm. broad, the margin 5-angled; capsules globose, deflexed when mature, not exceeding the calyx, 4-valved, 4-seeded; seeds dark crimson.

MEXICO: Near Colima, Dr. Edward Palmer, 1897 (*nos. 42* and *43*); type sheet, *no. 315418* in the United States National Herbarium.

SHUTEREIA Choisy, Mém. Soc. Phys. Genèv. **6**: 485. 1833. — Conv. Or. 103. — In DC. Prodr. **9**: 435. 1845. Not *Shuteria* Wight & Arn. 1834

Sanilum Raf. Fl. Tellur. **4**: 70. 1836.

Hewittia Wight, Madr. Jour. **5**: 22. 1837. — Wight & Arn. Linnaea Litt.-Ber. **1838**: 213. 1838. — Benth. & Hook. Gen. **2**: 837. — Kuntze, Rev. Gen. 441. 1891.

Palmia Endl. Gen. 653. 1838.

Type species: *S. bicolor* (Vahl) Choisy, *l. c.* (= *Hewittia sublobata* Kuntze).

Shutereia sublobata (L. f.)

Convolvulus sublobatus L. f. Suppl. 135. 1781.

C. bicolor Vahl, Symb. Bot. **3**: 25. 1794. — Bot. Mag. *pl. 2205*.

Hewittia bicolor Wight & Arn. Madr. Jour. **5**: 22. 1837.

H. sublobata Kuntze, Rev. Gen. 441. 1891.

Calonyction tastense (Brandegee)

Ipomoea tastensis Brandegee, Zoe **5**: 168. 1903.

Type locality: Western slope of Sierra el Taste, Lower California.

CALONYCTION MURICATUM (L.) G. Don, Gen. Syst. **4**: 264. 1838

Convolvulus muricatus L. Mant. 44. 1767.

Ipomoea muricata Jacq. Hort. Schoenb. **3**: 40. 1798. Not *I. muricata* Cav.

Ipomoea bona-nox purpurascens Ker, Bot. Reg. *pl. 240*. 1818.

Calonyction speciosum muricatum Choisy, in DC. Prodr. **9**: 345. 1845.

Ipomoea spinulosa Brandegee, Zoe **5**: 169. 1903.

The type locality for this species is "Himalayas and Japan," but the tropical American material has long been regarded as identical with that of the old world. The specimens of "*Ipomoea spinulosa* Brandegee" sent to the National Herbarium differ in no important particular from typical specimens of *C. muricatum* from both hemispheres.

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